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10/086,904	02/28/2002	Jon Gelsey	042390.P13786	4050

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Blakely, Sokoloff, Taylor & Zafman
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1030

EXAMINER	
ALEJANDRO, RAYMOND	
ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,904	GELSEY, JON	
	Examiner	Art Unit	
	Raymond Alejandro	1745	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *30,34,35,37-43,56-58 and 60-64* is/are pending in the application.

4a) Of the above claim(s) *31-33 and 44-54* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30,34,35,37-43,56-58 and 60-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/16/04 has been entered.

This is response to the foregoing and its related amendment filed 07/16/04. The applicant has overcome the objection and the 35 USC 102 rejection. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments. However, certain newly submitted claims (as all original claims 1-14 and 24-29 have been cancelled) are finally rejected over art as seen below and for the reasons that follow:

Election/Restrictions

1. Claims 31-33 and 44-54 have been withdrawn from consideration as being directed to a non-elected invention as set forth in a prior office action (see the final rejection dated 04/14/04) as well as applicant's acknowledgement in the amendment of 07/16/04 at Election/Restriction section.

Specification

2. The amendment filed 07/16/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the

original disclosure is as follows: (claims 30 and 35) a) "*a second compartment coupled to the first compartment*"; b) (claims 30 and 58) "*to transfer net heat*". In this regard, it is noted that both limitations are unsupported by the original specification because the specification simply states that:

(with respect to item a) "*Inside the first compartment 110 is a second compartment 130 containing a second hydrogen generator 140*" (SECTION 0036) and "*The exothermic 210 and endothermic 220 hydrogen generators are operably coupled to a fuel cell 230*" (SECTION 0042)", thus, nowhere in the specification can be found the second compartment coupled with the first compartment as instantly recited in claims 30 and 35;

(with respect to item b) the specification merely discloses that "*the rates of endothermic and exothermic hydrogen generation may be balanced to provide an overall thermally neutral hydrogen generation, or even a net endothermic hydrogen generation*" (SECTION 0033), and "*the net release of heat 180 by the hydrogen storage system 100 is low. In some embodiments of the invention, the rates of exothermic and/or endothermic hydrogen production may be controlled so that the hydrogen storage system 100 is thermally neutral. In this case, heat released 150 by the exothermic hydrogen generator 140 is balanced by heat absorbed by the endothermic hydrogen generator 120*" (SECTION 0040). Thus, the specification appears to be leading into the teaching of having a thermally neutral system and/or a neglectable release of heat.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 30, 34-35, 37-43, 56-58 and 60-64 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The added material which is not supported by the original disclosure is as follows: (claims 30 and 35) a) "*a second compartment coupled to the first compartment*"; b) (claims 30 and 58) "*to transfer net heat*". In this regard, it is noted that both limitations are unsupported by the original specification because the specification simply states that:

(with respect to item a) "*Inside the first compartment 110 is a second compartment 130 containing a second hydrogen generator 140*" (SECTION 0036) and "*The exothermic 210 and endothermic 220 hydrogen generators are operably coupled to a fuel cell 230*" (SECTION 0042)", thus, nowhere in the specification can be found the second compartment coupled with the first compartment as instantly recited in claims 30 and 35;

(with respect to item b) the specification merely discloses that "*the rates of endothermic and exothermic hydrogen generation may be balanced to provide an overall thermally neutral hydrogen generation, or even a net endothermic hydrogen generation*" (SECTION 0033), and "*the net release of heat 180 by the hydrogen storage system 100 is low. In some embodiments of*

the invention, the rates of exothermic and/or endothermic hydrogen production may be controlled so that the hydrogen storage system 100 is thermally neutral. In this case, heat released 150 by the exothermic hydrogen generator 140 is balanced by heat absorbed by the endothermic hydrogen generator 120" (SECTION 0040). Thus, the specification appears to be leading into the teaching of having a thermally neutral system and/or a neglectable release of heat.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 30, 34-35, 37-43, 56-58 and 60-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al 5702491 in view of Heung 6267229.

The present application is directed to an apparatus wherein the disclosed inventive concept comprises the specific hydrogen generators coupled to a fuel cell.

With respect to claims 30, 34-35, 37, 56, 58 and 60-61:

Long et al teach a portable hydrogen generator (TITLE/COL 1, lines 8-10/COL 12, lines 24-26) which utilizes both exothermic and endothermic reactions therein (COL 8, lines 1-17). Long et al disclose that hydrogen generator 10 includes a thermally isolated container 12 (COL 3, lines 62-67). It is disclosed that the heat generated by exothermic reaction of the $LiAlH_4$ is used to generate additional hydrogen by the endothermic thermal decomposition (COL 8, lines 1-17/COL 4, lines 2-9). Long et al teach that by providing a thermally isolated environment for the hydrogen generator, and by controlling the supply of water for hydrolysis and the temperature, the generation of hydrogen is maintained stable and controllable through balancing exothermic and endothermic reactions of Table III (COL 8, lines 8-13). It is also disclosed that by utilizing both exothermic and endothermic reactions in hydrogen generator 10, the typical problems associated with volumetric expansions are avoided (COL 8, lines 16-35). *Thus, the disclosed hydrogen generator itself is capable of being simultaneously used as both the exothermic hydrogen generator and the endothermic hydrogen generator .*

Regarding claim 34, 56-58:

It is also taught that hydrogen generated in the hydrogen generator is supplied for used to a fuel cell (COL 4, lines 54-60). Long et al teach fuel cells (COL 4, lines 54-60/ COL 5, lines 54-56). *It is thus noted that the thermal characteristics of the fuel cell are inherent to the same fuel cell application therein.*

Regarding claims 38-39, 42 and 62-63:

Long et al disclose that the primary candidates for use with the hydrogen generator as the primary chemical hydride includes $NaBH_4$ (COL 5, lines 57-63). It is disclosed that the ternary hydrides can be in liquid state (COL 5, line 60-61). TABLE II shows excess water reaction (TABLE II). *Thus, it does encompass the formation of aqueous solutions of chemical hydride materials.*

On the matter of claims 40-42 and 62:

Long et al also makes known that metal hydrides can be used as the chemical hydride (COL 3, lines 8-16/ COL 3, line 67 to COL 4, line 9/COL 5, lines 49-56/ TABLE I).

With reference to claim 43:

Long et al further disclose that the generation of hydrogen is maintained stable and controllable through balancing exothermic and endothermic reactions (COL 8, lines 1-18).

Long et al disclose an exothermic and endothermic hydrogen generating apparatus according to the aforementioned. However, Long et al do not disclose the specific compartments and the device coupled to the fuel cell to receive the power.

With respect to claims 30, 34-35, 37, 56, 58 and 60:

Heung discloses a device that stores and discharges hydrogen comprising dividers partitioning a container into separate chambers to hold the hydrogen storage medium in separate cells (ABSTRACT/ COL 2, lines 5-20).

Heung teaches that his invention is to provide a hydrogen storage device using a container partitioned into chambers (COL 4, lines 28-32); to provide a heat transferring surface which delivers heat to or removes heat from the solid storage medium (COL 4, lines 43-47). A matrix formed from thermally conductive material that improves heat transfer within the

container; cells formed by the matrix which distribute heat to and from the solid hydrogen storage medium; dividers that separate the container into chambers (compartment), and a modular design permitting simple adjustment of the total hydrogen capacity (COL 4, lines 8-20).

> A matrix formed from thermally conductive material like a thermal foam that improves heat transfer within the container;
> Cells, formed by the matrix, which distribute heat to and from the solid hydrogen storage medium;
> Dividers that separate the container into chambers that keep the storage medium evenly distributed among the chambers to avoid the particle expansion problem;
> A modular design that permits simple adjustment of the total hydrogen capacity; and
> The use of a metal hydride in a ground particle form for the storage medium, which avoids the need for compaction or other treatment, thus lowering the cost.

Heung discloses that the hydrogen storage containers can be formed in virtually any shape (COL 3, lines 12-17). Multiple containers, in these or other configurations, can be interconnected into modules, multiple modules can be interconnected to even further increase the total hydrogen storage capacity (COL 3, lines 42-54).

Heung also discloses the use of a first container for holding the hydrogen storage medium and having a port; and the use of a second container for holding the hydrogen storage medium and having another port; wherein the ports are coupled (CLAIMS 1 and 5-6). *Thus, the containers are coupled.*

> 1. A hydrogen storage device comprising:
> a. a first container for holding a solid hydrogen storage medium, the container comprising a wall formed from a thermally conductive material;
>
> e. wherein the first container has a port through which hydrogen fluid flows.

5. A hydrogen storage device according to claim 1 further comprising:
a. a second container for holding a solid hydrogen storage medium;
b. a conduit for conveying fluid through the second container, whereby hydrogen absorption or desorption from the storage medium results depending on the temperature of the fluid; and
c. wherein the second container has a second port through which hydrogen fluid flows.

6. A hydrogen storage device according to claim 5 in which the first and second containers are connected by:
a. means for coupling the first and second ports; and
b. means for coupling the circulating means with the conduit.

With reference to claims 34 and 57-58:

Heung also discloses powering vehicles, machinery or appliances with hydrogen powered fuel cells (COL 1, lines 18-23/ COL 4, lines 25-28). *Thus, it encompasses electronic devices coupled to the fuel cell to receive the electrical power.*

As to claim 64:

Heung also teaches each compartment having ports (CLAIMS 1 and 5-6):

6. A hydrogen storage device according to claim 5 in which the first and second containers are connected by:
a. means for coupling the first and second ports; and
b. means for coupling the circulating means with the conduit.

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the specific compartments of Heung in the hydrogen generating apparatus of Long et al because Heung teaches that divided chambers (the specific compartments) allows to hold hydrogen storage medium in separate cells so as to provide a heat transferring surface which delivers heat to or removes heat from the solid storage medium and preventing the storage medium from migrating into a different generating apparatus area. This helps to evenly distribute the storage medium as well as to provide a modular design so that the total hydrogen capacity is flexible; and to improve heat transfer. *It is also noted that both references are relevant to each other because they address the same problem of providing a*

suitable storage and/or generation space in hydrogen storage/generating apparatus. Moreover, it has been held that making a device/feature either portable, integral and/or separable is obvious. Succinctly stated, fact that a claimed device/apparatus is made portable, separable, integral or adjustable is not sufficient by itself to patentably distinguish over an otherwise old device unless there are new or unexpected results as it is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant. In re Larson 144 USPQ 347, 349. In re Dulberg 129 USPQ 348, 349. In re Stevens 101 USPQ 284. In re Lindberg 93 USPQ 23.

With respect to the device coupled to the fuel cell to receive the power, it would have been obvious to one skilled in the art at the time the invention was made to couple a device to receive power from the fuel cell of Heung in the fuel cell of Long et al because Heung discloses that fuel cells using generated hydrogen are employed to power machinery, appliances and vehicles. Thus, the electrochemical energy conversion of the fuel cell is useful to energize energy powered devices.

8. Claims 30, 34-35, 37-43, 56-58 and 60-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heung 6267229 Long et al 5702491 in view of Long et al 5702491.

The present application is directed to an apparatus wherein the disclosed inventive concept comprises the specific hydrogen generators coupled to a fuel cell.

<u>With respect to claims 30, 34-35, 37, 56, 58 and 60-61:</u>

Heung discloses a device that stores and discharges hydrogen comprising dividers partitioning a container into separate chambers to hold the hydrogen storage medium in separate cells (ABSTRACT/ COL 2, lines 5-20).

Heung teaches that his invention is to provide a hydrogen storage device using a container partitioned into chambers (COL 4, lines 28-32); to provide a heat transferring surface which delivers heat to or removes heat from the solid storage medium (COL 4, lines 43-47). A matrix formed from thermally conductive material that improves heat transfer within the container; cells formed by the matrix which distribute heat to and from the solid hydrogen storage medium; dividers that separate the container into chambers (compartment), and a modular design permitting simple adjustment of the total hydrogen capacity (COL 4, lines 8-20).

> A matrix formed from thermally conductive material like a thermal foam that improves heat transfer within the container;
>
> Cells, formed by the matrix, which distribute heat to and from the solid hydrogen storage medium;
>
> Dividers that separate the container into chambers that keep the storage medium evenly distributed among the chambers to avoid the particle expansion problem;
>
> A modular design that permits simple adjustment of the total hydrogen capacity; and
>
> The use of a metal hydride in a ground particle form for the storage medium, which avoids the need for compaction or other treatment, thus lowering the cost.

Heung discloses that the hydrogen storage containers can be formed in virtually any shape (COL 3, lines 12-17). Multiple containers, in these or other configurations, can be interconnected into modules, multiple modules can be interconnected to even further increase the total hydrogen storage capacity (COL 3, lines 42-54).

Heung also discloses the use of a first container for holding the hydrogen storage medium and having a port; and the use of a second container for holding the hydrogen storage medium

and having another port; wherein the ports are coupled (CLAIMS 1 and 5-6). *Thus, the containers are coupled.*

1. A hydrogen storage device comprising:

a. a first container for holding a solid hydrogen storage medium, the container comprising a wall formed from a thermally conductive material;

e. wherein the first container has a port through which hydrogen fluid flows.

5. A hydrogen storage device according to claim 1 further comprising:

a. a second container for holding a solid hydrogen storage medium;

b. a conduit for conveying fluid through the second container, whereby hydrogen absorption or desorption from the storage medium results depending on the temperature of the fluid; and

c. wherein the second container has a second port through which hydrogen fluid flows.

6. A hydrogen storage device according to claim 5 in which the first and second containers are connected by:

a. means for coupling the first and second ports; and

b. means for coupling the circulating means with the conduit.

With reference to claims 34 and 57-58:

Heung also discloses powering vehicles, machinery or appliances with hydrogen powered fuel cells (COL 1, lines 18-23/ COL 4, lines 25-28). *Thus, it encompasses electronic devices coupled to the fuel cell to receive the electrical power.*

On the matter of claims 40-42 and 62-63:

Heung also discloses the use of metal hydrides (COL 2, lines 15-20/ COL 3, lines 13-18/ COL 7, lines 10-18)

As for claim 43:

Heung discloses that the cells distribute heat to and from the hydrogen storage medium (COL 4, lines 8-18/ COL 4, lines 43-46) and having the modular design permitting adjustment of the total hydrogen capacity (COL 4, lines 15-20).

As to claim 64:

Heung also teaches each compartment having ports (CLAIMS 1 and 5-6):

> **6**. A hydrogen storage device according to claim **5** in which the first and second containers are connected by:
> a. means for coupling the first and second ports; and
> b. means for coupling the circulating means with the conduit.

Heung discloses a hydrogen storage device according to the foregoing. However, Heung does not expressly disclose the specific endothermic-exothermic hydrogen generation configuration.

With respect to claims 30, 34-35, 37, 56, 58 and 60-61:

Long et al teach a portable hydrogen generator (TITLE/COL 1, lines 8-10/COL 12, lines 24-26) which utilizes both exothermic and endothermic reactions therein (COL 8, lines 1-17). Long et al disclose that hydrogen generator 10 includes a thermally isolated container 12 (COL 3, lines 62-67). It is disclosed that the heat generated by exothermic reaction of the $LiAlH_4$ is used to generate additional hydrogen by the endothermic thermal decomposition (COL 8, lines 1-17/COL 4, lines 2-9). Long et al teach that by providing a thermally isolated environment for the hydrogen generator, and by controlling the supply of water for hydrolysis and the temperature, the generation of hydrogen is maintained stable and controllable through balancing exothermic and endothermic reactions of Table III (COL 8, lines 8-13). It is also disclosed that by utilizing both exothermic and endothermic reactions in hydrogen generator 10, the typical problems

associated with volumetric expansions are avoided (COL 8, lines 16-35). *Thus, the disclosed hydrogen generator itself is capable of being simultaneously used as both the exothermic hydrogen generator and the endothermic hydrogen generator .*

Regarding claim 34, 56-58:

It is also taught that hydrogen generated in the hydrogen generator is supplied for used to a fuel cell (COL 4, lines 54-60). Long et al teach fuel cells (COL 4, lines 54-60/ COL 5, lines 54-56). *It is thus noted that the thermal characteristics of the fuel cell are inherent to the same fuel cell application therein.*

Regarding claims 38-39, 42 and 62-63:

Long et al disclose that the primary candidates for use with the hydrogen generator as the primary chemical hydride includes $NaBH_4$ (COL 5, lines 57-63). It is disclosed that the ternary hydrides can be in liquid state (COL 5, line 60-61). TABLE II shows excess water reaction (TABLE II). *Thus, it does encompass the formation of aqueous solutions of chemical hydride materials.*

On the matter of claims 40-42 and 62-63:

Long et al also makes known that metal hydrides can be used as the chemical hydride (COL 3, lines 8-16/ COL 3, line 67 to COL 4, line 9/COL 5, lines 49-56/ TABLE I).

With reference to claim 43:

Long et al further disclose that the generation of hydrogen is maintained stable and controllable through balancing exothermic and endothermic reactions (COL 8, lines 1-18).

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to use the specific endothermic-exothermic hydrogen generation

configuration of Long et al in hydrogen storage device containers of Heung because Long et al disclose that such hydrogen generator employs an exothermic hydrolysis reaction and an endothermic thermal decomposition to provide a controllable generation of hydrogen from a container arrangement. Thus, the entire process balances the exothermic chemical reaction with the endothermic decomposition therein to provide a satisfactory generation of hydrogen.

Response to Arguments

9. Applicant's arguments with respect to claims 30, 34-35, 37-43, 56-58 and 60-64 have been considered but are moot in view of the new ground of rejection (*i.e. Heung in view of Long et al*).

10. However, since the ground of rejection of Long et al in view of Heung has also been maintained hereinabove, the examiner likes to address the following applicant's arguments:

a) in response to applicant's arguments against the references individually (*page 11-13 of the amendment dated 07/16/04*), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

b) as to the assertion that the prior art fails to disclose "*the second compartment including an exothermic hydrogen generator to transfer net heat to the endothermic hydrogen generator*", the examiner points out that Long references clearly stipulates that the entire process balances the exothermic chemical reaction with the endothermic decomposition (*Long et al, COL 3, lines 38-40*). *Thus, the net heat is been transferred therebetween.* Additionally, absent further specific

heat transfer magnitude/degree as well as a clear indication in the original disclosure of what "*net heat*" stands for, it is further contended that since the heat transfer is a quantitative measurement (*heat transfer can be quantified*), even if the prior art totally balances the heat transfer so that the "*net heat*" ("quantified heat") is zero, then such quantified neat heat would be 0.

c) in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). *In this case, the two references are pertinent and relevant to one another as they both address the same problem of providing suitable hydrogen generating unit and/or apparatus for storing and releasing hydrogen.*

d) in response to applicant's argument that "*there is no suggestion/motivation to combine the references*", the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro
Examiner
Art Unit 1745